Navigation Systems records
1957 [1970-1979] 1983
1 cubic foot
JPL564

Scope and Content
These records were from the Navigation Systems Section library, section 314 and transferred by Peter Breckhemier. Many documents are stamped "Navigation S/W library, Section 314, JPL" Although it is never spelled out "S/W" commonly is used for "software", and so these records are probably from the navigation software library of section314. They primarily describe different software developed by JPL and partners and include many user guides, programmer guides and reference manuals related to navigation and primarily related to Mariner Jupiter/Saturn 1977. The majority of the records were numbered documents and transferred to the institutional repository for those documents, Engineering Document Services, or EDS. The remaining records were consolidated into one box. Listing of the documents transferred to EDS serve as a bibliography of the original 314 library, and can be retrieved on request.

Organization/Arrangement
Loose items maintained in original order.

Administrative History
Peter Breckheimer came to the lab in 1966 and retired in 2006 after 39 years of service. The majority of these records date from the period of his employment. He was hired into Section 314, and stayed until a reorganization of the Systems division (310) in 1995. Coincidentally 1966 is the same year the division personnel charts begin. Section 314 was the Scientific Programming section for three years, in 1969 it became the Computation and Analysis section. From 1977 until 1995, past the period of these records, section 314 was the Navigations Systems section. Breckheimer was listed a supervisor on the personnel charts starting in 1977. A 1993 chart identifies the groups and Breckheimer was listed as the supervisor of group 3149, Navigation Software Development. After the reorganization in 1995 and Section 314 became the Ground Systems section and Section 312 became the Navigation and Flight Mechanics section. At this point Breckheimer moved to 312 but remained the supervisor of Navigation Software Development. This history of the names of section 314 helps explain the concentration on software development items in the collection.

Provenance
Pete Breckheimer, Navigation Systems, Section 314, transferred twelve cubic feet to records storage on 6/25/84 as shipment number F-07793. Unnumbered records were consolidated into one box.

Access Restriction
Records must be reviewed before use and cleared before public release.

Conservation/Preservation
Standard preparations of documents for long term storage were completed.

Separation Statement
JPL number reports were removed and transferred to Engineering Document Services. Some external reports were sent to the originating creators as requested by their archivists/records manager, see appendix for details.

Finding Aids
No other finding aids exist.

BOX 1

Fld 1. MRC technical summary report #875, Guaranteed error bounds for computed solutions of nonlinear two point boundary value problems, June 1968
Fld 2. System requirements document orbit data editor program, 2-16-79
Fld 3. OPUS reference manual, 1-30-79
Fld 4. KPLOT, 1-30-81
Fld 5. Experiment proposal for the Lunar Polar Orbiter – title Geophysics Altimetry Gravity Experiment (GAGE), 7-10-75
Fld 6. Regress Vol. 1 and 2, this includes some portions of 900- series reports (including 900-507, 900-298, 900-534 and 900-554) that have been annotated, as well having other documentation added, and gathered together as a package.
Fld 7. Tabbed folder 1 of 2, Tabs C-N, included are memos, hand written notes flow charts, etc. tabs are alphabetical and are abbreviated, some examples include DOPDAT, ERROR and NCODE
Fld 8. Tabbed folder 2 of 2, Tabs O-X, some examples are OERC, SCCO, TTOE and XTER
Fld 9. 391 library subroutine directory, 4-14-72
Fld 10. Software design document for Mariner IV tape conversion program, 1-30-73
Fld 11. Program reference manual for Mariner IV B1 tape conversion program (CONVB1), 5-11-73
Fld 12. IOMs : 372.40/295, and unnumbered
Fld 13. Mariner Jupiter/Saturn (MJS) 1977 software planning document part 2, orbit determination program (ODP) and Trajectory analysis and prediction subsystem (DPTRAJ) 8-15-76
Fld 14. Computer Sciences Corporation (CSC) correspondence, MJS software planning document for the MEDIA system, 5-18-76
Fld 15. MJS ODP utility programs user's guides, n.d.
Fld 16. ORAN descriptive summary, EG&G Washington Analytical Service Center Report, 7-78
Fld 17. Link description for output, n.d.
Fld 18. MJS 1977 user acceptance test plan for the radio data conditioning software, launch version, 8-1-76
Fld 19. Software management practices and experience at TRW, TRW defense and space systems group report, n.d.
Fld 20. SETRAJ User's guide, draft copy, 10-25-77
Fld 21. MJS ODP utility programs user's guides, n.d.
Fld 22. CSC utilities (includes reports and correspondence from CSC w/ tabs for COMPARE and Program file indexer (PFI), and Deliver tape program generator (DTPG)) 1973-1975
Fld 23. User's guide to TRANSFER, CONTOUR,OMASS and TSFRD, 4-29-80
Fld 24. WETPRO (WET- Weather Transmission)
Fld 25. Standardized development of computer software, draft 6, Robert C. Tausworthe, 1976 (This unpublished draft is bound like a book)

Appendix: Items Removed From Collection

INTERNAL JPL Reports, moved to Engineering Document Services (EDS)

Abbreviations used in report numbers
CM= Computing Memorandum
EM = Engineering Memorandum
IOM= Interoffice Memorandum
SOM=Software Operators Manual
SSD= Software Specification Document
STT= Software Test and Transfer
TM = Technical Memorandum (TM sometimes means Technical Manual, but is not used that way in this collection)

12-152 Perturbation theory and Green's functions (ORDCIT) 10-21-57
312-1 Long Term behavior of artificial satellite orbits due to third-body perturbations, 3-31-64
500-26 JPL/NASA MOTION PICTURE FILM CATALOG

605-167 MM'69 orbit determination strategy and accuracy, 2-15-69
606-1 Mars scientific model, 3-1-72
607-55 Pioneer project flight path analysis and command (FPAC) team procedures for Pioneer D, 6-20-68
605-58 Preliminary flight path analysis orbit determination and maneuver strategy Mariner Mars 1969, 2-21-68 (also known as PD 138)

610-33 Preliminary orbit determination strategy and accuracy Mariner Mars 1971, 8-15-70
610-34 Pt. 1, Mariner Mars 1971 preliminary maneuver analysis, 11-15-70
610-92 Mariner Mars 1971 preliminary interplanetary trajectory characteristics, 1-1-70
610-223 Mariner Mars 1971 simulation summary report, 6-1-72
610-113 Mariner Mars 1971 orbit design and characteristics handbook, 4-15-70

611-12 Vol.2 Viking 1975 orbiter system mission studies, Volume II: navigation appraisal, 7-1-70
613-13 Helios Mission control and computing center capabilities, 1-15-73

615-88 Preliminary orbit determination strategy and accuracy Mariner Venus Mercury 1973, 7-72
615-124 Mariner Venus Mercury 1973 orbit data editor users guide, 7-2-73
615-128 Final orbit determination strategy and accuracy Mariner Venus Mercury 1973, (no date)

616-44 Encounter phase orbit determination strategy and accuracy for Pioneer 10 and 11, 9-1-73
616-59 Pioneer 11 orbit determination results at Jupiter encounter, 6-76

618-5 Rev. B, Voyager project plan, 4-1-77
618-6 Mariner Jupiter/Saturn 1977 science management plan, 5-19-72
618-8 Outer Planets Science Steering Group mission definition phase Mariner Jupiter/Saturn 1977, 5-15-72
618-53 Rev. A, Mariner Jupiter/Saturn 1977 mission plan, 12-2-74
618-53 Rev. B, Mariner Jupiter/Saturn 1977 mission plan, 11-15-76
618-58 Change 1, Mariner Jupiter Saturn 1977 software management plan, 10-31-75
618-88 Pioneer Venus Orbiter orbit determination operations system, 4-80
618-113 Mariner Jupiter Saturn standard trajectories, 2-8-74

618-115 Mariner Jupiter Saturn 1977 navigation plan, 12-1-74

618-115 Rev. A, Mariner Jupiter Saturn 1977 navigation plan, 4-20-77

618-116 Mariner Jupiter Saturn 1977 trajectory characteristics and design, 7-15-75

618-116 Addition 2, Mariner Jupiter Saturn 1977 trajectory characteristics and design, 2-1-76

618-118 Voyager orbit determination strategy and accuracy, 8-1-77

618-119 Voyager maneuver strategy and analysis, 8-11-77

618-120 Mariner Jupiter Saturn 1977 targeting specification, 2-1-77

618-500 Vol. 1, Mariner Jupiter Saturn 1977 mission operations system, functional requirements, 6-26-75

618-500 Vol. 2, Mariner Jupiter Saturn 1977 mission operations system, functional design specifications, 2-1-76

618-500 Vol. 3, Functional specification Mariner Jupiter Saturn 1977 mission operations system, 11-13-75

618-505 Voyager Space flight operation plan (SFOP) Volume IV, operations specifications and constraints, 6-1-77

618-553 Voyager MOS software maintenance plan, 4-15-79

618-560 Mariner Jupiter Saturn 1977 mission operations system software change control plan, 4-23-76

618-612 Mariner Jupiter Saturn 1977 software requirements document/software planning document, part 1, trajectory analysis and prediction subsystem, 1-76

618-621 Software requirements document, Mariner Jupiter Saturn 1977 ground data system, navigations system, radio metric data conditioning subsystem, 2-9-76

618-632 Mariner Jupiter Saturn 1977 software requirements document/software planning document, Part 1., orbit determination program (ODP), launch version, 4-30-76

618-637 Software planning document Mariner Jupiter Saturn 1977 ground data system navigation system radio metric data conditioning subsystem, 7-8-76

618-638 Part 1, Mariner Jupiter Saturn 1977 software requirements document/software planning document Part 1, trajectory analysis subsystem, 618-638

618-640 Part 1, MJS77 software requirements document, software planning document planetary observation instrument targeting and encounter reconnaissance (pointer), 7-1-76

618-644 Voyager software requirements intermediate data record processor, 4-5-77

618-648 Part 2, Mariner Jupiter Saturn 1977 software planning document, maneuver analysis subsystem, maneuver operations program set (MOPS), 5-18-76

618-650 Mariner Jupiter/Saturn 1977 user acceptance test plan for the orbit determination program (ODP) launch version, 7-14-76

618-650_Cng1 Mariner Jupiter/Saturn 1977 user acceptance test plan for the orbit determination program (ODP) launch version, 9-24-76

618-660 Mariner Jupiter Saturn 1977 users acceptance test plan for the trajectory analysis subsystem (DPTRAJ) launch/cruise, 8-30-76

618-665 Mariner Jupiter Saturn 1977 trajectory analysis subsystem (DPTRAJ) user's guide for STATRJ, 9-24-76

618-690 Detailed processing requirements, Voyager adaptation, Space Flight Operations Center (SFOC), telemetry, 4-15-90

618-691

618-699_RevA Voyager user's guide (MOPS), 3-1-79

618-674 Vol. 1, Voyager DPTRAJ-ODP user's reference manual, 8-23-77

618-674 Vol. 1, Part 2, Voyager DPTRAJ-ODP user's reference manual, 8-23-77

618-675 Mariner Jupiter Saturn 1977 user acceptance test plan for the maneuver operations program set (MOPS) launch version, 10-15-76

618-680 Vol. 1, Voyager '77 program design for the orbit data editor (ODE), 12-20-76

618-682 Vol. 1, Voyager '77 users guide for the orbit data editor (ODE), 12-20-76

618-695 Mariner Jupiter Saturn '77 acceptance test plan media program set launch version, 1-31-77

715-5 Solar probe advanced technical development, fiscal year 1979 final report, 12-14-79
720-2 Ion drive technology assessment review, 7-14-77

730-13 A benefit and role assessment of advanced automation for NASA, 4-14-78
730-30 Autonomous systems technology development program progress review for 1978, 10-12-78

760-72 Earth and ocean physics applications planning study, 5-17-72
760-73 Earth physics satellite radar altimeter study, 5-17-72
760-76 Science aspects of a remotely controlled mars surface roving vehicle, 7-1-72
760-88 Advanced Pioneer planetary probe mission guidance and navigation requirements, 11-15-73
760-89 Chapter 10, Final report of a Venus Orbital Imaging Radar (VOIR) study, 11-30-73

770-1 Vol. 1, FY'78 research and technology operating plans submitted to NASA-OSS by the Technology and Space Program office, Jet Propulsion Laboratory, 6-1-77
770-1 Vol. 2, FY'78 research and technology objectives and plans submitted to NASA-OAST by the Technology and Space Program Development office, Jet Propulsion Laboratory, 6-10-77
770-10 Research and technology objectives and plans (RTOPs) submission to NASA Office of Space Science (OSS) fiscal year 1980, 5-1-79
770-13 Research and technology objectives and plans (RTOPs) submission to NASA Office of Space Science (OSS) fiscal year 1981, 5-1-80
770-14 Research and technology objectives and plans (RTOPs) submission to NASA Office of Aeronautics and Space Technology (OAST) fiscal year 1981, 5-1-80

810-3 Rev. C, TDA standard practice, glossary of deep space network abbreviations and designations, 11-15-76
810-13 change 1, DSN standard practice software implementation guidelines and practices, 2-1-76
810-13 change 2, DSN standard practice software implementation guidelines and practices, 8-1-77
810-16 DSN Standard practice preparation of software requirements documents, 12-15-75
810-17 DSN standard practice preparation of software definition documents, 7-15-76
810-19 DSN standard practice preparation of software specification documents, 3-1-77
810-20 DSN standard practice preparation of software operator's manuals, 2-1-77
810-21 DSN standard practice preparation of software test and transfer documents, 11-15-76
810-24 DSN standard practice preparation of subsystem functional design documents, 7-27-77

821-4 Rev. A, Deep space network system requirements DSN command system (1974-1983)
821-9 Deep space network system requirements DSN tracking system (1979 through 1983) 12-15-79

824-18 Rev. A, Deep space station subsystem requirements, DSS radio science subsystem (1978-1983), 6-1-78

890-69 Planetary orbiter error analysis study program (POEAS) operations manual, n.d.
890-84 Final report review of division 31 DSN operations functions, 5-15-78
890-116 Navigation network study phase B study report, 10-1-80

900-56 Vol. 4, Double precision orbit determination program parts segment, 5-1-67
900-164 Single precision orbit determination program user's guide, 11-30-68
900-235 TARP target aiming restraints plotter, 11-26-69
900-236-Vol8_pt1 Double precision orbit determination program user's guide, 5-2-69

900-237-vol8-pt2 Double precision orbit determination program programmer's guide, 6-1-69
900-257 Time data sequential processor (TDSP), 8-26-69
900-341 General plot program, 5-15-70
900-354 DPTRAJ programmers reference manual, Vol. 3 LINK TRIC, 6-15-70
900-370 User's guide to ASTRAL, 4-30-70
900-419 User's guide to programming AIDS, 6-9-72
900-425 SENSITIVITY an orbit determination analysis program, 12-4-70
900-440 Rev. A, Scientific computing facility customer information manual, 6-1-71
900-444_Rev. D, Multimission real-time tracking subsystem users guide, 4-15-73
900-444 Rev. D Change 4, Multimission real-time tracking subsystem users guide, model 9 -VMOSS 3.3, 3-15-76
900-458 Approach guidance – science imaging tradeoff study, 7-15-71
900-467 Rev. B Vol. 5, Optical navigation demonstration programmer's reference manual XTR Extractor program, 7-17-72
900-468 Rev. A Vol. 6, Optical navigation demonstration programmer's reference manual CGG Celestial geometry generator, 3-23-73
900-469 Rev. A Vol. 7, Optical navigation demonstration programmer's reference manual, IMP Imaging Processing Program Set, 3-30-73
900-496 Vol. 2 Change 1, DPTRAJ program 1108 development phase, programmer's reference manual, LINK ODIN, 1-15-73
900-506 Vol. 3, DPTRAJ program 1108 development phase, programmer's reference manual, LINKS TRIC and LANDER, 3-30-72
900-507 Vol. 5 Part 1, DPTRAJ program 1108 development phase, programmer's reference manual, LINK POST, 4-28-72
900-507 Vol. 5 Part 2, DPTRAJ program 1108 development phase, programmer's reference manual, LINK POST, 4-28-72
900-508 Vol. 4 Part 1, DPTRAJ program 1108 development phase, programmer's reference manual, LINK PATH, 4-28-72
900-508 Vol. 4 Part 2, DPTRAJ program 1108 development phase, programmer's reference manual, LINK PATH, 4-28-72
900-563, Orbit data editor programmer's reference manual, 10-18-72
900-563 Rev. A, Orbit data editor programmer's reference manual, nd
900-578 Engineering planning document, mission analysis division, the alphabet system, 10-15-72
900-587 Utility program for the Univac 1108, 12-31-72
900-605 Athena filter sequential orbit determination program with general evaluation capability, 3-8-73
900-607 Program reference manual flight support version of the transmission media calibration program (media) for the support of MVM'73, 4-16-73
900-616 Software design documentation for the science and navigation information processing system (SNIPS), 11-26-73
900-661 computational aspects of discrete sequential estimation, 5-1-74
900-672 Observations of Jupiter's satellites I literature search and bibliography, 7-74
900-674 Rev. A, Software detailed specification document for the SIGMA-5 PREDIK program, 6-1-75
900-674 Rev. A, Change 1, Software detailed specification document for the SIGMA-5 PREDIK, version 5 program, 4-1-76
900-717 MJS77 navigation sensitivity and cost/benefit trade study final report, 10-8-75
900-722 DSN intermediate data record (IDR) stripper program user's manual, 8-7-78
900-728 Preliminary user's guide for the fast Phi-factor generator program (FPGP) and associated programs, 7-18-76
900-747 Acceptance test plan and procedures for the fast phi-factor generator program (FPG), 7-15-76
900-747 Rev. 1, Acceptance test plan and procedures for the fast phi-factor generator program FPG, 12-1-76
900-750 User's operating instructions for the fast Phi-factor generator program (FPGP), 7-15-76
900-753 Syntactic description of the MBasic language, 10-28-76
900-764 Optical navigation image processing system (ONIPS) implementation plan, 12-15-76
900-769 DSN intermediate data record (IDR) stripper program system requirements document, 8-17-77

900-770
900-771
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900-796 Rotations of Mars, 4-21-77
900-865 Software requirement and interface definition document for the transmission media simulation software (TMS), 2-1-78
900-880 Multimission radio science software subsystem, radio science intermediate data record processor /occultation, editing processor interface, 6-12-78
900-881 Radio science intermediate data record (IDR) stripper program set, user's manual, 6-12-78
900-882
900-988
900-923 PCTDIF users guide and documentation, 7-26-79

5030-18 Vol. 1, Unmanned deep-ocean survey system (UDOSS) preliminary design study report, 4-6-76
5030-18 Vol. 2, Unmanned deep-ocean survey system (UDOSS) functional requirements, 4-6-76

CM 366-471 JPL ephemeris development 1960-1967, 2-23-81

CM 914-285 Rev 1 (supersedes TM 914-285) Special feature subprogram library, 2-8-72
CM 914-337 SFTRAN (**S**tructured programing to **F**ortran **TRANS**lator) user guide, 7-31-73
CM 914-367 @News, 12-11-74
CM 914-368 @LOGS, 12-19-74
CM 914-369 @run-status, 1-3-75
CM 914-370 EZ10, 1-3-75
CM-914-373 SYS-STATUS, 7-1-76
CM 914-383 Description of @com, 5-7-75
CM 914-388 Rev. A, Fiche processor for the UNIVAC 1108, 10-8-75
CM 914-400 Status Monitor, 11-25-75

EM 312-76-1 LPO Users guide, 8-4-76
EM 312-77-23 Software requirements document for Seasat footprint location processes (SEAFOOT) 2-1-77
EM 312-77-33 SETRAJ Users guide Vol. 2, sample cases, 6-13-77

EM 314-181 FAST Users reference manual, 2-79
EM 314-184 ASQPSQ/NUSTAR programmers reference guide, 3-20-79
EM 314-184A ASQPSQ/NUSTAR programmers reference guide appendix, 3-20-79
EM 314-190 FPGP post processor module (FPPOST vers. 20) Software operator’s manual, 5-16-79
EM 314-191 FPGP post processor module (FPPOST vers. 20) Test and transfer document, 5-21-79
EM 314-195 ASQPSQ users guide, 9-5-79
EM 314-196 NUSTAR Users guide, 9-5-79
EM 314-261 Station location software users guide, 4-6-82
EM 314-306 Tracking station coordinates determined from the Voyager Jupiter encounter data arc, 5-2-83

EM 335.4-11 Shifts in the longitude and UTI systems due to changes in the Astronomical constants, 2-15-81

EM 391-594 How to improve an estimate without really trying, 8-30-74

EM-392-187 Use of the HP-65 programmable calculator for astrodynamic calculations, McLaughlin
EM-392-210 The mass of Saturn's rings, McLaughlin, Talbot
EM-392-211 Dynamical analysis of a lunar polar orbiter part 2, Dallas and Ling
EM-392-211A Recon user's guide

IOM 312-76-3-80 Advanced concepts group library document, 10-18-76

IOM 314.2-225 Change A to software operators manual planetary orbiter error analysis study program (POEAS) DUK-5127-OP, 10-1-78
IOM 314.3-306 Users Guide to @SUB, 4-30-81
IOM 314.5-85 Users Guides to selected MJS interplanetary orbit determination auxiliary software, 5-18-77
IOM 314.6-83 Users Guide to the MEDIA/RANCOR programs, 12-8-78
IOM 314.9-218 LDUMP Processor and users guide, 8-17-77

IOM 315.21-719 CARDS Documentation, 10-29-69

IOM 335.10-9 Update of SOM-DUK-5127-OP-C, 2-6-80

IOM 391.13-466 Programmers reference manual for the TRKED, Mark I, Mod 5 program, 3-1-72

IOM 914.34/18
IOM-914.34-485
IOM-914.34-678
IOM-914.34-685
IOM-914.34-709

JPL Pub 77-24 Prelim, Software design and documentation language, 5-15-77
JPL Pub 77-24 Rev. 1, Software design and documentation language, 8-1-79
JPL Pub 77-26 A parameter estimation subroutine package, 7-1-77
JPL Pub 77-30 Software for C1 surface interpolation, 8-15-77
JPL Pub 79-56 Preparation guide for class B software specification documents, 10-1-79

RE-168 Astrodynamics of lunar satellites: part 1 orbit determination, volume 1 of 2 summary and conclusion, 10-1-63

SOM-DUK-5127-OP Software operators manual planetary orbiter error analysis study program (POEAS), 10-15-78
SOM-DUK-5127-OP-A Software operators manual planetary orbiter error analysis study program (POEAS), 10-1-78
SOM-DUK-5127-OP-B Software operators manual planetary orbiter error analysis study program (POEAS), 12-1-78
SOM-DUK-5127-OP-B (Rev A? Software operators manual planetary orbiter error analysis study program (POEAS), 5-1-79
SOM-DUK-5127-OP-C Software operators manual planetary orbiter error analysis study program (POEAS), 2-1-80

SSD-DOI-5071-OP Rev. A Vol. 1, Software specification document NOCC tracking subsystem tracking prediction program PREDIK DOI-5071-OP-F, 10-15-79
SSD-DOI-5071-OP Rev. A Vol. 2, Software specification document NOCC tracking subsystem tracking prediction program PREDIK DOI-5071-OP-F, 10-15-79

SSD-DMH-5110-OP Rev. A Vol. 1, Software specification document GCF high speed data error detection and correction program, 1-20-79

SSD-DMH-5110-OP Rev. A Vol. 2, Software specification document GCF high speed data error detection and correction program, 1-20-79

SSD-DMH-5110-OP Rev. A Vol. 3, Software specification document GCF high speed data error detection and correction program, 1-20-79

SSD-DMH-5110-OP Rev. A Vol. 4, Software specification document GCF high speed data error detection and correction program, 1-20-79

STT-DOI-5071-OP-E Software test and transfer PREDIK, 7-18-78

STT-DUK-5127-OP-A Software test and transfer planetary orbiter error analysis study program, 11-1-78

STT-DUK-5127-OP-B Software test and transfer planetary orbiter error analysis study program, 5-1-79

TM 309 Bibliography of the orbit determination and trajectory groups 1962-1972, 8-21-72

TM 391-57 Computer program abstracts, 1-70

TM 391-276 Statistical techniques for the determination of DSN locations, 2-2-72

TM-392-137 Stochastic Optimal maneuver strategy for multi target missions, Dwivedi

TM 77-46 Recurrence relations for computing with modified divided difference, 7-11-77

TM 914-300 Modification to an integrator design, 3-15-72

TM 914-311 UNIVAC 1100 series CTS programmer reference, preliminary, 8-22-72

TM 914-312 Changing stepsize in the integration of differential equations using modified divided differences, 3-20-73

TM 915.32-231

Sent to outside repository or destroyed as a duplicate:

NATO AGARD-AG-258, Guidance and control software, 1980

Computer Sciences Corporation (CSC) (one access copy sent to EDS)

From website http://www.csc.com/aerospace_defense/ds/11233-history_of_a_and_d_at_csc "CSC entered the aerospace industry in 1961 with a contract for support work at the Space Flight Operations Facility of the NASA Jet Propulsion Laboratory (JPL) in Southern California. Together, CSC and JPL created the computer system that guided and tracked telemetry data from unmanned lunar and planetary probes. This data, along with other JPL research, was a major force for the U.S. space effort….After our initial partnership with NASA at JPL, CSC grew its footprint to support nearly every NASA center across the country. Our legacy includes extensive science and engineering support as well as information technology (IT), business process outsourcing and facilities management. In fact, CSC has supported more than 300 NASA missions since 1961."

CSC report Functional design document for JSOLVE program, 5-7-73

CSC report Functional Requirements Document for processing weather transmission data (WETPRO), 1-12-76

CSC report Programmer reference manual for JSOLVE program, 8-24-73

CSC report Programmer's and user's guide for PVPET/SIG5, CETAPE and DPGP, 11-1-76
CSC report Reference manual for the tracking data generator program (TDGEN), 12-29-72
CSC report Summary of ODP salient information modifications, 1-10-73

Lefschetz Center for Dynamical Systems CDS reports (Sent to CDS)

CDS Technical report 72-5 Versatile methods for the sequential Monte Carlo optimization of unconstrained stochastic systems, 11-72
CDS Technical report 72-4 Probability methods for the convergence of finite difference approximations to partial differential integral equations, 11-72
CDS Technical Report 73-1 Approximations, existence, and numerical procedures for optimal stochastic controls, 1-73

Catalog Record

LOCAL CALL NUMBER: JPL564
CORPORATE AUTHOR: Jet Propulsion Laboratory (U.S.). Navigation Systems Section (Section 314)
TITLE: Navigation Systems Records 1957 [1970-1979] 1983
PHYSICAL DESCRIP: 1.0 cubic ft. (25 folders)
ORGANIZATION/ARRANG.: Loose items maintained in original order.
ACCESS RESTRICTION: Records must be reviewed and cleared before foreign release. ABSTRACT: These records were from the Navigation Systems Section library, section 314 and transferred by Peter Breckhemier. Many documents are stamped “Navigation S/W library, Section 314, JPL” Although it is never spelled out “S/W” commonly is used for “software”, and so these records are probably from the navigation software library of section314. They primarily describe different software developed by JPL and partners and include many user guides, programmer guides and reference manuals related to navigation and primarily related to Mariner Jupiter/Saturn 1977. The majority of the records were numbered documents and transferred to the institutional repository for those documents, Engineering Document Services, or EDS. The remaining records were consolidated into one box. Listing of the documents transferred to EDS serve as a bibliography of the original 314 library, and can be retrieved on request.
ADMIN HISTORY NOTE: Peter Breckheimer came to the lab in 1966 and retired in 2006 after 39 years of service. The majority of these records date from the period of his employment. He was hired into Section 314, and stayed until a reorganization of the Systems division (310) in 1995. Coincidentally 1966 is the same year the division personnel charts begin. Section 314 was the Scientific Programming section for three years, in 1969 it became the Computation and Analysis section. From 1977 until 1995, past the period of these records, section 314 was the Navigations Systems section. Breckheimer was listed a supervisor on the personnel charts starting in 1977. A 1993 chart identifies the groups and Breckheimer was listed as the supervisor of group 3149, Navigation Software Development. After the reorganization in 1995 and Section 314 became the Ground Systems section and Section 312 became the Navigation and Flight Mechanics section. At this point Breckheimer moved to 312 but remained the supervisor of Navigation Software Development. This history of the names of section 314 helps explain the concentration on software development items in the collection.
05/02/2011, 16:47
FINDING AIDS: Finding aid available in the archives; folder level control.
PROVENANCE NOTE: Pete Breckheimer, Navigation Systems, Section 314, transferred twelve cubic feet to records storage on 6/25/84 as shipment number F¬07793. Unnumbered documents were consolidated into one box. JPL manuals and D number reports were removed and transferred to Engineering Document Services, and published materials were removed. Some external reports were sent to the originating creators as requested by their archists/records manager.
PERSONAL SUBJECT: Breckheimer, Peter
CORPORATE SUBJECT: Jet Propulsion Laboratory (U.S.).--History.
CORPORATE SUBJECT: Jet Propulsion Laboratory (U.S.) Navigations Systems
SUBJECT TERM: Mariner Jupiter-Saturn flyby nasat
SUBJECT TERM: orbit determination nasat SUBJECT TERM: navigation nasat
SUBJECT TERM: user manuals (computer programs) nasat SUBJECT TERM: Deep Space Network nasat
ELECTRONIC ACCESS: Inventory available online. PDF file. https://pub-lib.jpl.
nasa.gov/docushare/dsweb/Get/Document-1678/jpl564